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ABSTRACT

This self-instructional learning packet was designed to introduce instructors to the development and writing of learning packets for their own courses. The packet contains seven learning modules, each providing a rationale, learning objectives, a pre-assessment test, informational text, learning activities, and a self-assessment instrument and answers. The first six modules consider specific components of learning packets, explaining why each is important and how to write or select them for maximum effectiveness. These modules focus on: (1) introductory material (i.e., the preface, syllabus, instructions, and table of contents); (2) rationale statements explaining the relevance of the module or packet to students' concerns; (3) learning objectives; (4) learning activities (e.g., computer instruction, lectures, print and audiovisual materials, discussions, role playing, simulation games, programmed instruction, laboratory activities, and independent study); (5) evaluation methods (e.g., norm-referenced and criterion-referenced assessment) and particular kinds of assessment items (e.g., true/false, multiple choice, matching, completion, short answer, and essay questions); and (6) remediation and enrichment activities. The final module discusses methods of evaluating and revising learning packets, based on assessment of instructional effectiveness, analysis of student performance, and student responses to questionnaires. (HB)

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Writing Learning Packets

A Practitioner's Guide

January, 1981

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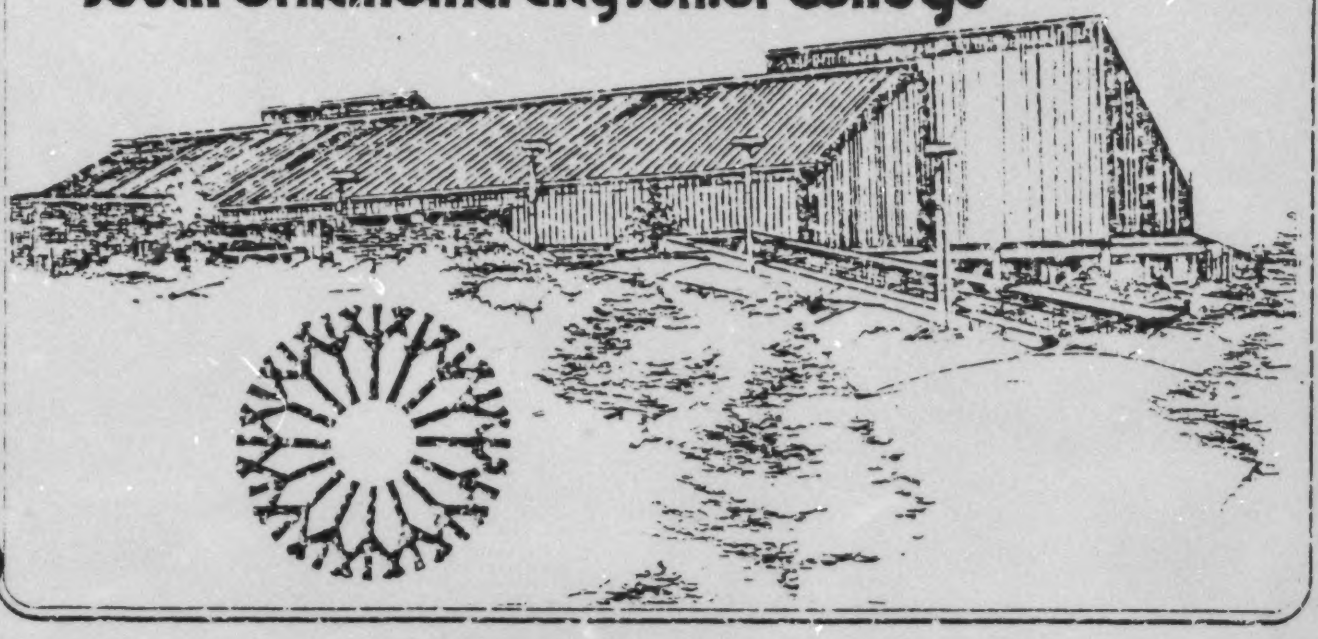

JC 830 189

TABLE OF CONTENTS

PREFACE....3

HOW TO USE THIS LEARNING PACKET....5

MODULE I - INTRODUCTORY MATERIAL....7

Pre-Assessment....9
Pre-Assessment Answers....10
An Introduction to Introductory Material....11
Self-Assessment....16
Self-Assessment Answers....17

MODULE II - THE RATIONALE....18

Pre-Assessment....20
Pre-Assessment Answers....21
Writing an Effective Rationale....22
Self-Assessment....24
Self-Assessment Answers....25

MODULE III - OBJECTIVES....26

Pre-Assessment....28
Pre-Assessment Answers....30
Preparing Objectives....32
List of Words Which are Effective in Constructing Objectives....34
List of Words Which are Ineffective in Constructing Objectives....35
Self-Assessment....41
Self-Assessment Answers....43

MODULE IV - LEARNING ACTIVITIES....45

Pre-Assessment....47
Pre-Assessment Answers....48
Selection and Utilization of Learning Activities....50
Levels of Learning Experiences....52
Instructional Techniques....54
Computers....54
Lecture....54
Books (Print Media)....55
Television....55
Motion Pictures....55
Overhead Transparencies....56
Slides....56
Filmstrips....57
Audio....57
Discussion....58

Role Playing.....58
Simulated Games.....58
Programmed Instruction.....59
Laboratory Activities.....59
Independent Study Activities.....59
Effective Use of Media.....60
Self-Assessment.....62
Self-Assessment Answers.....63

MODULE V - ASSESSMENT.....65

Pre-Assessment.....67
Pre-Assessment Answers.....69
Constructing and Using Tests.....70
Norm-Referenced Assessment.....70
Criterion-Referenced Assessment.....71
Test Item/Objective Relationship.....71
Assessments Used in Systemized Instruction.....73
Constructing Assessment Items.....75
True/False.....75
Multiple Choice.....75
Matching.....76
Completion.....76
Short Answer.....77
Actual Performance.....77
Essay.....77
Self-Assessment.....79
Self-Assessment Answers.....82

MODULE VI - REMEDIATION AND ENRICHMENT ACTIVITIES.....84

Pre-Assessment.....86
Pre-Assessment Answers.....87
Descriptions and Purposes of Remedial Enrichment Activities.....88
Self-Assessment.....90
Self-Assessment Answers.....91

MODULE VII - EVALUATION AND REVISION.....92

Pre-Assessment.....94
Pre-Assessment Answers.....95
Assessing Instructional Effectiveness.....96
Analysis of Student Performance.....97
Student Questionnaire.....99
Self-Assessment.....101
Self-Assessment Answers.....103

QUESTIONNAIRE.....104

WRITING LEARNING PACKETS: A PRACTITIONER'S GUIDE

PREFACE

This learning packet is designed to introduce instructors to the development and writing of learning packets. In an effort to make the packet useful to a broad range of individuals with varying educational and work experiences, the use of educational terminology is minimized. Also, in recognition of the many demands for an instructor's time, minimum, essential information is presented in the least time consuming manner possible. This packet certainly does not present an indepth study of the development of learning packets. Therefore, it is advisable to consult with the school's instructional designer before applying a packet which has been developed with the aid of this packet. For a more indepth study of instructional development and the writing of learning packets, one should read "Developing Learning Packets at South Oklahoma City Junior College" by Robert F. Allen. It is available in the SOCJC Bookstore.

All materials required to complete this learning packet are contained within the packet. In many instances, audio visual materials would have provided appropriate or alternative learning activities. However, in an effort to produce a "desk top" guide to the development of learning packets the decision was made to provide the self-contained packet you now hold in your hands.

This packet uses a self-instructional approach to learning. Therefore, individuals proceed at their own speed by following the steps provided within this packet.

Since this is not a course, no post-tests (tests given at the end of a period of instruction) are given. Only self-tests (tests in which learners test themselves) are provided. Through these tests each individual determines when the subject matter has been mastered and when to proceed to the next module.

HOW TO USE THIS LEARNING PACKET

This packet is designed to assist you in developing learning packets. It is divided into seven units of study called modules. Each module presents information on a specific aspect of developing a learning packet. To achieve maximum benefit, you should carefully follow the steps listed below as you proceed through each module.

STEP 1 - Read the rationale. This is designed to explain why the study of each module is a necessary and "worthwhile" activity.

STEP 2 - Read the objectives. They tell what you are expected to know or be able to do after completing the module.

STEP 3 - Take the pre-assessment test. This test is designed to determine if you already know what is taught in that particular module. If you already know the information, it is obviously not necessary that you spend time on that module. If such is the case, you may proceed to the next module at this point.

STEP 4 - Read and perform the learning activities. These activities are provided to assist you in gaining the knowledge necessary to achieve the objectives given for the module.

STEP 5 - Take the self-assessment test. This test will help you determine whether you have gained the knowledge necessary to meet the objectives of the module.

STEP 5A - If you correctly answer the test questions, you may practice the knowledge you have acquired by performing the enrichment activity.

STEP 5B - If you do not correctly answer the test questions, you should follow the remedial activities for the module. These activities are designed to further assist you in gaining the knowledge necessary to meet the objectives of the module.

STEP 5C - Since the immediate application of newly learned information greatly increases understanding and retention, it is recommended that you perform the enrichment activity. If you elect not to do the enrichment activity and you have correctly answered the test questions then proceed to next module at this point.

MODULE I

INTRODUCTORY INFORMATION

RATIONALE:

Most books on the subject of preparing learning packets do not discuss the use of introductory information within a learning packet. However, the author has concluded from personal observations and responses on student questionnaires that this type of information gives students a better "feel" for the course. They tend to adopt a better attitude, as well as, gain a better understanding of how the course will be conducted. The instructor who is successful in achieving a positive attitude on the part of students will have made a significant step toward assisting students in achieving the course objectives.

OBJECTIVES:

The learner will, on a written test:

1. state the key to preparing effective introductory material for a learning packet.
2. list the four elements of introductory information common to the learning packets for most courses.

3. list the five general catagories of information usually included in a syllabus.

PRE-ASSESSMENT

Take the pre-assessment test provided on page 10.

LEARNING ACTIVITY:

Read "An Introduction to Introductory Material" on page 12.

SELF-ASSESSMENT

Take the self-assessment test provided on page 17.

REMEDIATION:

Perform the learning activity again or consult with the school's instructional designer. After completing one of these activities take the self-assessment test again.

ENRICHMENT ACTIVITY:

Select a course you have taught in the past and prepare the introductory material for its learning packet. (NOTE: if you prefer to prepare material for a new course, it may be necessary to perform this activity after completion of the enrichment activities for the other modules).

MODULE I

PRE-ASSESSMENT:

1. State the key to preparing effective introductory material for a learning packet.

2. List the elements of introductory information common to the learning packets for most courses.

   a.

   b.

   c.

   d.

3. List the general categories of information usually included in a syllabus.

   a.

   b.

   c.

   d.

   e.

Correct answers are on the following page. 11

MODULE I

PRE-ASSESSMENT ANSWERS:

1. Always ask: "What information regarding the course do students need or want to know?"

2. (a) preface
   (b) syllabus
   (c) instructions
   (d) table of contents

3. (a) information relating to the instructor
   (b) course materials
   (c) course format
   (d) grading options and criteria
   (e) additional information

AN INTRODUCTION TO INTRODUCTORY MATERIAL

In addition to relieving some of a student's apprehension when beginning a course, well written introductory material can be a time saving device for the instructor, as well as, the student. This is achieved by providing a permanent source of information regarding the course. While it is true that instructors should and do discuss such things as testing and organization of the course during the first class meeting; it is equally true that students tend not to record this information. Consequently, if a question regarding the organization of a course arises at a later date, the student has little recourse but to seek out the instructor. With well written introductory material, the student will need only consult the learning packet. This information will also be invaluable to those students who enroll late or for some other reason do not attend the first class meeting.

The key to preparing effective introductory information is to ask "what information regarding the course do students need or want to know." Of course, each course is unique and therefore will have different information to communicate to its students. However, there are elements which are common to the learning packets for most courses and should provide a core for the introductory material.

PREFACE

The first element is a preface. Students are interested in

knowing the purpose or objective of the course. What is the course designed to do? Or, in general terms what will students learn by taking the course? For example, consider the case of a course titled "Audio Visual Aids." Will students learn how to use visual aids in making presentations; will they learn how to design and produce visual aids; or will they learn how to apply, as well as, produce visual aids? This information could be very significant to some students.

SYLLABUS

A second element is the course description or syllabus. A syllabus usually includes:

1. Information relating to the instructor. This should include the instructor's name, office location, office hours, and office telephone number. Nothing sours a student toward an instructor, a course, and an institution any faster than having a difficult time locating an instructor when assistance is needed.
2. Course Materials. This includes the titles of textbooks, workbooks, or lab manuals which are required to complete the course. Students are notorious for losing a handout or not making notes regarding this type of information. By including this in the learning packet the information is neatly packaged and readily available.
3. Course Format. Information relating to procedures are included. What types of activities will be applied? Is the course primarily lecture? Will there be a lot of

field trips around the city and state? Or a combination of all these activities and others? Are there activities which students will be expected to perform independently from the class, such as visits to certain art galleries, etc? All questions such as these should be answered in this section.

4. Grading Options and Criteria. Grades, of course, are of great interest to students and as a result tend to cause anxiety. Much of this anxiety can be reduced by providing insight into how the student is to be tested. Information such as types of tests, (written, hands on, demonstration, etc.), is the number of tests, and when they are to be given is always helpful. Of even more importance is information which describes what students must achieve or "do" to receive a particular grade. This may or may not include a listing of all learning objectives (behavioral objectives) for each module within the course. There is some disagreement over whether the practice of listing objectives at the beginning of the packet is advisable. It is the author's opinion that such a practice has two negative aspects. First, it tends to cause students to wrongly observe that, "This is a lot of stuff to learn! There is no way I can learn all of that!" Secondly, it results in having all objectives listed at an inconvenient location within the learning packet. As students start each module, they must first turn back to the front of the learning packet to read the objectives then turn back

to the module and begin. Learning objectives are more convenient when listed at the beginning of each module and consequently more apt to be read by students before they start the module. It is better to give a more general statement such as "To receive a grade of "MH" the student must master the "M" objectives, as well as, the "MH" objectives for each module.

5. Additional Information. In most instances there is information unique to the course or instructor which should be included at the front of the learning packet. This might include such things as lab policies, an attendance policy statement, or any other policy or activity which the instructor feels is important.

INSTRUCTIONS:

The third element is "Instructions on How to Use the Learning Packet." The tendency here is to omit a step or alternative step. Many instructors assume, for example, that when students fail to answer questions on a self-assessment test they will automatically know to repeat the learning activities or consult with the instructor. This is certainly not always true. The key is to always tell students what to do next. Never leave them guessing! In some instances this will require explaining alternative steps. Some will be of the student's choosing, such as when they are given alternative means of learning the material. That is, the student is allowed to choose to learn the subject matter by viewing a videotape, attending a lecture, or reading a chapter in the textbook. Other alternative steps will depend upon the

student's previous response(s). For example, the step to be taken after a student has taken a self-assessment test will depend on whether the test was successfully completed. If the test was not successfully completed, the student is, of course, not allowed to choose the next step but is directed to repeat the learning activities or see the instructor. Be sure to have all possible steps explained clearly.

TABLE OF CONTENTS:

The final element is a table of contents. In addition to providing an outline and subject organization chart; it also communicates to students the "general" classifications of subjects to be studied. The table also makes the learning packet easier to use by providing the page number on which each module begins, etc.

MODULE I

SELF-ASSESSMENT:

1. State the key to preparing effective introductory material for a learning packet.

2. List the elements common to the learning packets for most courses.

   a.

   b.

   c.

   d.

3. List the general categories of information usually included in a syllabus.

   a.

   b.

   c.

   d.

   e.

Correct answers are on the following page.

MODULE I

SELF-ASSESSMENT ANSWERS:

1. Always ask: "What information regarding the course do students need or want to know?"

2. (a) preface
   (b) syllabus
   (c) instructions
   (d) table of contents

3. (a) information relating to the instructor
   (b) course materials
   (c) course format
   (d) grading options and criteria
   (e) additional information

MODULE II

THE RATIONALE

RATIONALE:

Students learn more, and learn it more effeciently, if they understand why the subject matter is important to them. Information is presented in this module to help you motivate students through the use of a module rationale.

OBJECTIVES:

The learner will, on a written test:

1. briefly state why a rationale is an important component of a module.
2. list the four student concerns toward which one should relate instruction.
3. discuss two ways in which one can determine whether a rationale is likely to be effective.

PRE-ASSESSMENT:

Take the pre-assessment test provided on page 21.

LEARNING ACTIVITIY:

Read "Writing an Effective Rationale" on pages 23-24 of this packet.

SELF-ASSESSMENT:

Take the self-assessment test provided on page 25.

REMEDIATION:

Perform the learning activity again or consult with the school's instructional designer. After completing one of these activities take the self-assessment test again.

ENRICHMENT ACTIVITY:

Select an instructional unit (module) from one of your courses and write an effective rationale for a unit of instruction.

MODULE II

PRE-ASSESSMENT:

1. A rationale is an important component of a module because:

2. When preparing an effective rationale, one should attempt to relate the subject matter to the students:

   a.

   b.

   c.

   d.

3. How can one determine whether a rationale is likely to be effective? (discuss two approaches)

Correct answers are on the following page.

MODULE II

PRE-ASSESSMENT ANSWERS

1. It can communicate to students why the instruction is relevant to their own, personal concerns, thereby, increasing the probability that the students will master the subject matter.

2. The student's

   (a) past experiences

   (b) futures

   (c) values

   (d) interests

3. (a) Ask several students if the rationale communicates to them the relevance of the subject matter to be taught.

   (b) Determine whether the rationale has the characteristics of an effective rationale described in "Writing an Effective Rationale" (page 23).

WRITING AN EFFECTIVE RATIONALE

It may seem common sense to state that students tend to learn better when they see some value in what they are supposed to be learning. However, many instructors feel that their subject is so interesting that mere exposure to it will instill in students the desire to do well. Unfortunately this is not true. A conscious attempt should be made to motivate students. Research studies indicate that when students understand why instruction is relevant to their own, personal concerns, they are more likely to master the subject matter. As an instructor, you want your students to learn as much as possible. The use of an effective rationale will help many of your students to learn considerably more than they would if the rationale had not been employed.

It is very difficult to determine whether students really understand or believe in the relevancy of instruction and accept its value. However, we can help promote a favorable attitude toward the subject by attempting to motivate the students. This is often accomplished by relating the subject to the students past experiences, their futures, their values, or their interests. It is easy to see that by relating the instruction to one or more of these concerns, students will more likely understand its relevance and thus, be more interested in learning the subject matter.

How can one recognize an effective rationale? As with all instructionally related materials, the best means of determining the value, or "usefullness" is to use the material, then evaluate

it by using student responses. After all, who is in a better position to judge whether the rationale was effective? However, this approach, quite obviously, cannot be applied until after the packet has been used at least once. One alternate approach is to ask several students if the rationale communicates to them the relevance of the subject matter to be taught. A final approach would be to determine whether the rationale has the characteristics of an effective rationale as suggested by Robl, Anderson, & Kurtz (1972). They suggest that an effective rationale should (1) motivate positively, (2) explain how the module fits into the total course, (3) be a convincing statement of why the student should study the module, and (4) be of a non-instructional nature.

MODULE II

SELF-ASSESSMENT

1. Briefly state why a rationale is an important component of a module.

2. When preparing an effective rationale, one should attempt to relate the subject matter to the students:

   (a)

   (b)

   (c)

   (d)

3. Discuss two possible methods of determining whether a rationale is likely to be effective.

Correct answers are on the following page.

MODULE II

SELF-ASSESSMENT ANSWERS

1. An effective rationale can help students understand why the information included in the module is relevant to their own, personal concerns. This increases the probability that students will master the subject matter.

2. (a) the student's past experiences
   (b) their futures
   (c) their values
   (d) their interests

3. (a) Ask several students if the rationale communicates to to them the relevance of the subject matter to be taught.

   (b) Determine whether the rationale has the characteristics of an effective rationale, i.e.:

      1. motivate positively
      2. explain how the module fits into the total course
      3. be a convincing statement of why the student should study the module.
      4. be of a non-instructional nature

MODULE III
OBJECTIVES

RATIONALE

Preparing well-written objectives is an essential first step in planning and carrying out instruction in a systematic manner. Objectives enable you to effectively communicate to your students what you expect them to learn. They also assist you in obtaining information about the effectiveness of your instruction in addition to cues about where improvements are needed.

OBJECTIVES:

The learner will, on a written test:

1. list the four ways in which objectives are valuable to instructors.
2. list the two ways in which objectives are valuable to students.
3. list the three essential components of an extremely clear and specific objective suggested by Mager.
4. when given a list of well-formulated objectives, identify the three essential components within each.
5. when given a list of poorly-written objectives, rewrite each objective to meet the three requirements of a well-formulated objective.

PRE-ASSESSMENT:

Take the pre-assessment test provided on page 29.

LEARNING ACTIVITY:

1. Read "Preparing Objectives" on pages 33-35 of this packet.

SELF-ASSESSMENT:

Take the self-assessment test provided on page 42 of this packet.

REMEDIATION:

Perform the learning activity again or consult with the school's instructional designer. After completing one of these activities, take the self-assessment test again.

ENRICHMENT ACTIVTIES:

Select an instructional unit (module) from one of your courses and write the objectives for a unit.

PRE-ASSESSMENT:

1. In what four ways are objectives valuable to instructors?

   (a)

   (b)

   (c)

   (d)

2. In what two ways are objectives valuable to students?

   (a)

   (b)

3. According to Mager, what are the 3 components of an extremely clear and specific objective?

   (a)

   (b)

   (c)

4. In each of these objectives, identify the performance (what the student is to do) by circling the appropriate word(s). Underline the condition. Draw a wavy line under the standard.

   Example: Given an electric typewriter and a sheet of paper, the student will (type a letter in block format) without error.

   (a) Given a list of agricultural products, the student will identify the four chief agricultural products of the Southern states.

(b) Without the use of any aids, the student will recite in class, the Pledge of Allegiance with no more than five errors.

5. Rewrite each of these objectives to meet the three requirements of a well-formulated objective.

(a) The student will know objectives that are well-written.

(b) The student will be familiar with Walt Whitman's poem "When Lilacs Last in the Dooryard Bloomed".

Correct answers are on the following pages.

MODULE III

PRE-ASSESSMENT ANSWERS:

1. (a) For planning and sequencing instructional methods and activities.

   (b) For evaluating student achievement

   (c) For evaluating effectiveness of instruction

   (d) For specifically defining the purpose(s) of the unit of instruction

2. (a) They describe exactly what is expected of the student

   (b) They provide the student with a goal to be mastered

3. (a) Use words that clearly identify what the student is to do.

   (b) Include the conditions or circumstances under which the student is to perform.

   (c) Include standards that tell how well the student is to perform.

4. (a) Given a list of agricultural products, the student will identify the four chief agricultural products of the Southern states. (When no standard is stated, as in this example, it is implied that the student must achieve 100% efficiency to recieve credit for the objective. In this example, the student must identify all four chief agricultural products).

   (b) Without the use of any aids, the student will recite in class, the Pledge of Allegiance with no more than five errors.

5. (a) Given a list of well-formulated objectives, the student will, on a written test, identify the three essential components within each.

   OR

   Given a list of objectives, the student will, on a written test identify those which are well formulated.

   (b) Without the use of any aids, the student will recite in

class, Walt Whitman's poem "When Lilacs Last in the Dooryard Bloomed".

Note: Either of these objectives could be re-written in several ways - these are just some examples.

PREPARING OBJECTIVES:

Instructors unfamiliar with the systematic approach to instruction often ask "why bother with objectives?" In response to this question, we begin our discussion by listing the values of objectives.

For the instructor, they are valuable in:

1. planning and sequencing instructional methods and activities.
2. evaluating student achievement.
3. evaluating the effectiveness of instruction.
4. specifically defining the purpose(s) of the unit of instruction.

For the student, they:

1. describe exactly what is expected.
2. provide a goal to be mastered.

Any module or unit of instruction must have a starting point, and for the instructor or instructional designer the job begins with identifying the objectives. Some writers refer to the objectives of a module as behavioral objectives. Others use the terms performance or instructional objectives. It makes little difference what name one uses. What is important, however, is that the objectives specify the competencies a student is to acquire and demonstrate. One of the distinquishing characteristics of this kind of objective is that it reduces ambiquity to a minimum. Such objectives are not subject to many different interpretations. These objectives must convey the same meaning to each person.

Several writers have developed sets of components which, they believe, should be contained within effective objectives. However, the most commonly applied set of essential components are

described by Robert T. Mager in "Preparing Instructional Objectives." Mager suggests that to be extremely clear and specific, an objective should:

1. Use words that clearly identify what the student is to do.
2. Include the conditions or circumstances under which the student is to perform.
3. Include standards that tell how well the student is to perform.

We will briefly look at each of these elements beginning with the first one listed above. Consider these statements:

1. "The student will understand the three chief differences between the Tories and the Whigs."
2. "The student will know the parts of a printing press."

These are not clearly stated objectives because to "understand" and "know" mean different things to different people. A student who "understands" could conceivably give evidence of this understanding in many different ways. He could write something, recite a number of statements, list a number of characteristics, or do many other things. Any of these could be accepted as evidence of understanding. A more clearly stated objective could have read:

"The student will list the three chief differences between the Tories and the Whigs."

The term "list" makes it very clear what the student will have to to do. You may also note that the term "know" in the second statement falls in the same category as "understand." A list of words that are helpful in constructing effective objectives is provided on page 35. A list of ineffective words is given on page 36.

LIST OF WORDS WHICH ARE EFFECTIVE IN CONSTRUCTING OBJECTIVES

adjust
align
apply
close
construct
(dis)assemble
(dis)connect
draw
duplicate
insert
load
manipulate
measure
open
operate
remove
replace
stencil
tune
turn-off-on
type

cite
copy
define
describe
explain
letter
list
name
quote
recite
record
repeat
reproduce
(re)state
transcribe
write
choose
classify
compare
contrast
decide

detect
differentiate
discern
distinquish
divide
identify
isolate
judge
match
pick
select

LIST OF WORDS WHICH ARE INEFFECTIVE IN CONSTRUCTING OBJECTIVES

know

understand

fully understand

appreciate

enjoy

feel

grasp the significance of

believe

Frequently the conditions or circumstances under which the student is to perform makes all the difference in the world. Take, for example, the case of a girl who might speak her lines in the school play flawlessly during dress rehearsal but "goes all to pieces" on opening night. Did this girl meet the objective? Was she required to speak her lines flawlessly on opening night or only during dress rehearsal? There is no way of determining this unless the conditions or circumstances of her performance were included in the objective.

Let us explain some conditions under which a student could be expected to perform:

1. The student shall analyze the causes of the American Civil War.

2. The student shall translate a passage of German.

Even though these objectives clearly state what a student is expected to do, they do not indicate the conditions under which the student is to perform. For example, the first objective does not specify what type of references and information the student is allowed to use in analyzing the causes of the American Civil War. Will the student be allowed to use a textbook to answer this question? A more appropriate way of writing the objective would have been:

"Given a list of ten possible causes of the American Civil War but without reference to his textbook, the student shall analyze the causes of the American Civil War, rank them as to probable importance and justify each ranking".

The second objective does not indicate under what conditions the student shall translate the passage. What type of passage is he expected to translate? Can he use a dictionary? A more clearly stated objective might have been:

> "With the aid of a German-English dictionary, the student shall translate into English a 200 word passage from a German newspaper".

The final element for which one looks in a well-stated objective is a description of the quality or quantity (or both) of the students performance. If we want him to hit a golf ball, we ought to state how far and how straight the ball must be hit. If we want him to solve math problems, we ought to state how many he must solve correctly. If we want him to explain something, we must state how well he must explain. Statements describing these types of things are called standards. Every good statement of an objective includes a standard for the learner's performance or product. This standard is used to measure whether the learner has mastered the objective.

Sometimes the standard is expressed in terms of score. "To correctly solve 90% of the problems on page 6" is an example of this kind of performance standard. "To name at least two of the chief differences between the Tories and the Whigs" also states a standard. However, standards may sometimes be implied. "To name the capitals of the 50 states" means that the learner must name all 50 capital cities correctly. If no standard is given, then it is assumed that the learner must perform the objective with 100% accuracy.

James D. Russell in "Modular Instruction" provides the follow-

ing checklist which should be helpful when you begin writing objectives:

CHECKLIST FOR EVALUATING OBJECTIVES

PERFORMANCE:

1. Does the objective contain a statement of the required student behavior?

PERFORMANCE CONDITIONS:

2. Does it contain a statement of each of the following types of conditions (if applicable)?
   - A. Range of problems which the student is expected to handle.
   - B. Equipment, tools, aids and references which the student may or may not use.
   - C. Special environmental conditions in which the student is to perform.

ACCEPTABLE PERFORMANCE:

3. Does it contain a statement of each of the following types of standards required of the students performance (if applicable)?
   - A. Time limit
   - B. Permitted tolerance (accuracy) for the student's responses.
   - C. The proportion or percentage of correct responses required.

Finally, let us look at some well-formulated objectives and discuss the various components.

> "Using a French-English dictionary, the student will translate Beaudelaire's poem "LeLectur" with no more than three grammatical errors".

In this objective it is clear that the student will be required to "translate". Thus, fulfilling the requirement that the student be told what he is to do. The condition is that he will be allowed to "use a French-English dictionary". And finally, the standard is that he may make "no more than three grammatical errors". This objective clearly states what the student is to do; the conditions under which the performance is to occur; and, the standard of performance which must be met. For practice, we will briefly look at two more objectives:

> "Given two algebra problems similar to the example, the student will solve them within five minutes and both must be correct".
>
> Example: $ax^2 + bx + c = 0$

Here the performance is to "solve" the algebra problems. The condition is "Given two algebra problems similar to the example," And, the standard is "within five minutes and both must be correct".

> "Given an alphabetical listing of the first 25 presidents of the United States, the student will be able to list the presidents in chronological order".

In this instance, the performance is to "list the presidents in chronological order". The condition is "given an alphabetical listing of the first 25 presidents of the United States". The standard, in this example, is not given. The objective, there-

fore, implies to the student that 100% accuracy is required to master the objective.

MODULE III

SELF-ASSESSMENT:

1. In what four ways are objectives valuable to instructors?

   (a)

   (b)

   (c)

   (d)

2. In what two ways are objectives valuable to students?

   (a)

   (b)

3. The three components of an extremely clear and specific objective, according to Mager are:

   (a)

   (b)

   (c)

4. In each of the following objectives, identify the performance by circling the appropriate word(s), underline the condition(s) and draw a wavy line under the standard(s).

   (a) Given the names of fifty states and the names of each capital, the student will match each state with its capital with 90% accuracy.

   (b) The learner will be able to classify objects as either acid or alkali, when given a list of familiar objects.

   (c) The learner will be able to alphabetize the words in a given list with 85% accuracy.

   (d) Given a ruler with $^{1}/16$" divisions and a piece of 2x4 board, the student will measure the length of the board to the nearest 1/16 of an inch.

5. Rewrite each of these objectives to meet the three requirements of a well-formulated objective.

   (a) The student will be able to grasp the difference between mitosis and osmosis.

   (b) The student will be familiar with the main characteristics of an instructional objective.

   (c) The student will thoroughly comprehend the reasons for writing objectives.

   (d) Given a list of objectives, the student will be able to sense the difference between adequate and inadequate statements of objectives.

Correct answers are on the following pages.

MODULE III

SELF-ASSESSMENT ANSWERS:

1. (a) for planning and sequencing instructional methods and activities

   (b) for evaluating student performance

   (c) for evaluating instructional effectiveness

   (d) for specifically defining the purpose(s) of the unit of instruction

2. (a) they describe exactly what is expected of the student

   (b) they provide the student with a goal to be mastered

3. (a) use words that clearly identify what the student is to do

   (b) include the conditions or circumstances under which the student is to perform

   (c) include standards that tell how well the student is to perform.

4. (a) Given the names of the fifty states and the names of each capital, the student will match each state with its capital with 90% accuracy.

   (b) The learner will be able to classify objects as either acid or alkali, when given a series of familiar objects.

   (c) The learner will be able to alphabetize the words in a given list with 85% accuracy.

   (d) Given a ruler with 1/16" divisions and a piece of 2X4 board, the student will measure the length of the board to the nearest 1/16 of an inch.

5. (a) On a written test, the student will describe the difference between mitosis and osmosis.

   (b) On a written test, the student will list the three characteristics of a well-formulated instructional objective.

   (c) On a written test, the student will list four reasons for writing objectives.

   (d) Given a list of objectives, the student will, on a written test, identify those which are well-written.

MODULE IV

LEARNING ACTIVITIES

RATIONALE:

Students gain the knowledge needed to achieve instructional objectives through exposure to learning activities prescribed by the instructor. Learning the advantages and disadvantages of various learning activities will better enable you to select those activities which assist students in successfully achieving the instructional objectives.

OBJECTIVES:

The learner will, on a written test:

1. Define "learning activities"
2. When given an instructional situation, list in preferred order, three learning activities which might be employed.
3. List the five steps in the basic media utilization plan explained in this packet and discuss at least two activities to be performed by the instructor in each step.

PRE-ASSESSMENT:

Take the pre-assessment test provided on page 48.

LEARNING ACTIVITIES:

1. Read "Selection and Evaluation of Learning Activities" on pages 51-53 of this packet.

REMEDIATION:

Perform the learning activity again or consult with the school's instructional designer. After completing one or both of these activities take the self-assessment test again.

ENRICHMENT ACTIVITY:

Select an instructional unit (module) from one of your courses and determine the learning activity(ies) most likely to enhance student learning in that unit.

UNIT IV

PRE-ASSESSMENT:

1. Define "learning activities".

2. Your objective is to impress upon your students the need for driving carefully. Name three learning activities, in preferred order, which could be used to assist students in achieving this objective.

3. List a five step basic media utilization plan and discuss at least two activities to be performed by the instructor in each step.

Correct answers to these questions are on the following page.

UNIT IV

PRE-ASSESSMENT ANSWERS:

1. Learning activities are those experiences that have been designed to help (or enable) the student master the objectives for the module.

2. Choose learning activities that are as concrete as possible. For this particular instructional situation three activities might be:

   A. If possible, arrange for students to ride ambulances, etc. so that they might see (first hand) the results of careless driving.

   B. If this is not possible an alternative would be to show them a videotape or film of an accident scene.

   C. Another alternative would be to show a slide/tape of an accident scene.

3. STEP 1 - PREPARE YOURSELF

   A. Preview the media

   B. Read available literature on the item

   C. Take notes during the preview

   D. Develop a "plan" to use the item

   STEP 2 - PREPARE THE ENVIRONMENT

   A. Arrange the equipment in a manner which enables all students to see and hear well.

   B. Locate light switches, assure that drapes work, etc.

   C. Reserve proper materials and equipment

   D. Be sure materials and equipment are set-up and ready to go when the time comes to use it.

   STEP 3 - PREPARE THE CLASS

   A. Introduce the item, make sure students understand why it is being presented at this particular time.

   B. Briefly describe what it covers.

C. Stress what is important to be learned from it.

D. Tell students what they will be expected to do after using the item.

STEP 4 - USE THE ITEM

A. Use the item properly

B. End the showing professionally

STEP 5 - FOLLOW-UP

A. Invite and answer (or discuss) questions or opinions generated by the experience.

B. Review the experience

C. Devise follow-up activities

SELECTION AND UTILIZATION OF LEARNING ACTIVITIES

Learning activities are those experiences that have been designed to help (or enable) the student master the objectives for the module. Much has been written about the organization of learning activities and many sequencing techniques have been suggested. Some suggested techniques are to proceed from simple to more complex ideas; progress from concrete concepts to more abstract concepts; and progress from known to unknown information. These make "sense" don't they? Naturally, an instructor wants to teach the simplest information first! "Common sense" tells us that the topic of adding fractions should be introduced in arithmetic after the student has learned to multiply and divide whole numbers, because the operations required in adding fractions include these "simpler" operations. Similarly, one attempts to insure that a social studies topic on "comparison of family structures across cultures" has been preceded by a topic on "the family" and one on "what is a culture". In short, it is difficult to find a basis for correct sequencing of learning activities other than a kind of "common sense" logical ordering. Therefore, for the purposes of this packet, it is sufficient to state that if one uses common sense, the sequencing of learning activities will be adequate.

A fact frequently overlooked by instructors is that not all people have the same learning style. In other words, not all students learn best or most efficiently from the same teaching method or technique. For example, one student may learn best by

viewing a slide/tape show. A second student may learn best from reading while a third learns best from viewing a videotape. Consequently, a module should have multiple paths to the attainment of the stated objectives. That is, the learner should be able to choose from alternative activities, depending on his own learning needs, skills, desires, and style.

When selecting learning activities, the instructor must decide which combination of instructional activities and media will most efficiently assist students in achieving the course objectives.

In this packet, no attempt has been made to create a model to prescribe precisely what activities should be used under different circumstances. Several attempts have been made to create instructional activity models. But in general, these models treat the selection process in a relatively rigid, prescriptive fashion and allow little room for innovation. This packet has been designed to provide pertinent information about learning experiences, instructional techniques, and the use of media which will assist instructors in selecting the appropriate learning activities for their own unique situation.

LEARNING EXPERIENCES:

Learning experiences run the whole gamut from the very abstract to the very concrete. These experiences have been graphically portrayed in a number of ways. The most well known are Dale's Cone of Experience and Smith & Nagel's Pyramid of Experience. For our purposes, the illustration on page 53 of this packet best presents the various levels of learning experiences. The "concrete"

LEVELS OF LEARNING EXPERIENCES*

CONCRETE

1. REAL LIFE EXPERIENCES
   (learning by doing)
   (perform experiment, operate a drill press)

2. ARTIFICIAL EXPERIENCES
   (role playing, driver training simulator, models)

3. ACTUAL OBSERVATION
   (field trips, demonstrations, exhibits)

4. AUDIOVISUAL REPRESENTATION
   (motion pictures, television, slide/tape)

5. VISUAL REPRESENTATION
   (slides, photographs)

6. AUDIO REPRESENTATION
   (radio, records, audiotapes)

7. READING EXPERIENCES
   (reading about an experience)

ABSTRACT

8. HEARING VERBAL DESCRIPTIONS
   (hearing descriptions via lecture, records, audiotapes)

*Modified from James Russell's Media Preference Hierarchy

end of the illustration represents experiences that are direct, live, and purposeful. As we move down through the levels of experiences that are increasingly abstract, we reach the lowest level and the principle tool of instruction - words - the most difficult teaching tool of all. It is important to recognize that the "Levels of Learning Experiences" illustration is only a model. It is not an exact and flawless representation of everything that takes place in the process of learning. The levels of experiences are not fixed or final in terms of levels of abstraction or concreteness. A field trip, for example,can be a miserable and abstract experience when conducted by an instructor with no skill in conducting field trips. On the other hand, an educational film can be a real life experience in the hands of an instructor skilled in the use of films. Most students are highly dependent on real life experiences for meaningful learning. Consequently, it is best to start at the most concrete level when possible and progressively move to lower levels when it is not possible to present material at a higher level. For example, when studying the skeletal structure of dinasours, the student should ideally have a dinasour skeleton to touch and handle. If that is not possible, then a model of a dinasour skeleton could be used. The next alternative would be a field trip to a museum where skeletons could be observed. Moving down the levels of experience, a motion picture or slides could be utilized. This example could be carried on until we reach the most abstract level of experience in which we have an instructor lecturing about the skeletal structure of dinasours with no visual representation.

INSTRUCTIONAL TECHNIQUES:

An attempt is made on the following pages to supply information on a variety of instructional techniques. Advantages, disadvantages, and some appropriate uses of each technique are listed. It is hoped that such information will enable the instructor to make an appropriate match between technique and instructional objectives of the module.

	ADVANTAGES	DISADVANTAGES	SOME APPROPRIATE USES
Computers	1. Can be interact with students. 2. Endless patience. 3. Excellent data processing and graphic capabilities.	1. Often boring to students once the novelty wears off. 2. Intimidates many students. 3. Lack of available software (commercially available courses) 4. Extensive time required to program a course (in-house) 5. With most systems, the instructor must know a computer language to program a course.	1. Providing practice & drills. 2. Providing tutorial lessons. 3. Simutation of real life events. 4. Educational game playing.

	ADVANTAGES	DISADVANTAGES	SOME APPROPRIATE USES
Lecture	1. Takes less preparation time than other approaches. 2. Often more current in content than alternative methods.	1. Limits student participation 2. Normally poor retention, students remember 20% of a 45 minute lecture.	1. Teaching factual information. 2. Presenting introductory orientation and summary information.

	ADVANTAGES	DISADVANTAGES	SOME APPROPRIATE USES
Lecture	3. Easily adjusted to meet audience interests.	3. Can become boring in the hands of an unskilled lecturer.	
Books (Print Media)	1. Learner controls the rate of delivery (reading speed) 2. Portability, can be used when and where a student chooses.	1. Must be read, poor reading skills is the greatest source of failure to learn. 2. Information frequently becomes quickly outdated.	1. May be used successfully for any subject. 2. Can be used to promote change in attitudes (Roots, Uncle Tom's Cabin)
Television	1. Reproduce motion 2. Instant replay 3. Reach large audiences 4. Takes student to places they would not or could not go 5. Enables students to see some demonstrations better 6. For the purposes of individual study, it may present other media or presentations in a more convenient manner	1. Equipment not always available 2. Equipment rather expensive 3. Several monitors are needed when shown to very large groups.	1. Provide immediate feedback to students concerning their performance. 2. Tape a lecture or demonstration for presentation in class on occassions when the instructor must miss class. 3. Present a demonstration when it is impossible for everyone in the class to see well. 4. Instructor self-assessment.
Motion Pictures	1. Special production techniques enable students to see things not visible to the naked eye. 2. Projection equipment relatively inexpensive. 3. Better than videotape for presentation to very large groups.	1. No instant feedback. 2. Not easily edited. 3. Must be shown in a darkroom - making note -taking difficult.	1. Present visual information involving change or motion. 2. Influence attitudes 3. Motivate students 4. Teach basic physical skills.

	ADVANTAGES	DISADVANTAGES	SOME APPROPRIATE USES
Overhead Transparencies	1. Allows instructor the freedom to edit, sequence, and revise instructional material. 2. Instructor may face an audience in a lighted room to encourage questions and discussion. 3. Permits instructors to write on a transparency, and to use a pointer, or edit items during projection. 4. Control the attention of the audience by turning the light off and on at proper times. 5. Provides opportunity for simple visuals in blackline or in colors, or in combination. 6. Permits sequential disclosure of information. 7. Relatively inexpensive	1. Requires a tilted screen to avoid a keystoning visual distortion. 2. Often poorly designed thus making reading difficult at best. 3. May actually hinder learning when proper presentation techniques are not employed.	1. Reinforce the comments of an instructor through the use of visual presentations of numerical values -percentages, amounts, or ratios - through the use of charts, diagrams, and scales. 2. Display words or phrases to be stressed or present an outline of points to be shown in coordination with the instructors presentation. 3. Clarify and reinforce the instructor's commentary by displaying elements of the lesson content. 4. Provide visual cues for the instructor to follow in presenting lesson material - a visual outline that helps both instructor and students.
Slides	1. Easily reproducable in large quantities. 2. Small size allows for compact packaging and storage. 3. Easily edited by deletting and adding slides. 4. Large visual display on screen allows instructor to point out critical items. 5. Can be designed for progressive disclosure of information.	1. Must be shown in a darkroom, note-taking difficult. 2. Slides easily lost. 3. Easy for slides to become mixed up - not in correct order, or turned upside-down.	1. When used with audio tapes can carry effective attitude-changing material. 2. Present a representation of the working location, position or situations that the student will face in the real world. 3. Clarify instructor's commentary. 4. Display words or points to be stressed. 5. Teach recognition of unfamiliar objects or things.

	ADVANTAGES	DISADVANTAGES	SOME APPROPRIATE USES
Slides	6. Present special visual effects such as cut-away or enlarged views of objects and distortion of image for impact. 7. May back-up slides to review specific points.		6. Display principles of objects having internal working parts through the use of cut-away views. 7. Multi-image slide shows can be effective in motivational and attitudinal change.
Filmstrips	1. Capitalize on large visual displays to point out critical items. 2. May back up visual displays to review specific points. 3. Storage problems are minimal. 4. Easy to operate filmstrip projectors. 5. Visuals are locked in, no chance of them getting out of sequence.	1. Cannot be edited. 2. Require a darkroom	1. Clarify and reinforce instruction. 2. Display visually, by words or statements, points to be stressed in the instructor's narrative. 3. Teach recognition of unfamiliar objects or things.
Audio	1. Equipment for utilizing audio programs is very cheap. 2. Excellent for supporting slide or filmstrip presentations. 3. Equipment is readily available and easy to use.	1. Care must be taken when using audio alone for long periods of time without providing any visual stimulus - students become bored. 2. Caution must be taken in pacing verbal content. Frequently too much content is presented too quickly.	1. Moods & attitudes may be established through use of music, sound effects, and narrator's voices. 2. Teach verbal skills. 3. Direct lab activities. 4. Use of student self-evaluation.

	ADVANTAGES	DISADVANTAGES	SOME APPROPRIATE USES
Discussion	1. Responsive to student needs and interests. 2. Students become actively involved in learning.	1. Can be boring and aimless if the instructor is unskilled in this method. 2. Requires considerable class time.	1. For instruction intended to change attitudes. 2. Present alternative stands on an issue. 3. Teaching and learning interpersonal skills.
Role Playing	1. Promotes student participation. 2. Personalizes emotions.	1. Requires considerable class time. 2. "Artificial" aspect often tends to reduce the reality of the situation.	1. Effective in changing attitudes. 2. Practice interpersonal skills. 3. Promote personal development of students. 4. Increase awareness of interpersonal problems and issues inherent in a given situation.
Simulation Games	1. Actively engage the student. 2. Promotes a relaxed classroom atmosphere. 3. Simulates real-life processes.	1. If too simplistic it leaves the student with an incomplete or stereotyped view of reality. 2. The fun of the play may overshadow all learning. 3. Requires considerable class time.	1. Influence attitudes and values. 2. Teach understanding of other social groups 3. Teach interpersonal skills such as negotiation, compromise, and communication.

	ADVANTAGES	DISADVANTAGES	SOME APPROPRIATE USES
Programmed Instruction	1. Allows self pacing 2. Provides immediate feedback. 3. Student actively participates in learning. 4. Frees the instructor to assist those students with questions.	1. Requires considerable development time. 2. Can be boring	1. Has been demonstrated to be successful in all subject matter areas except in the areas of interpersonal skills, attitude, and values.
Laboratory Activities	1. Allows student to work independently and yet receive personal, individualized attention. 2. Provides high level of student participation.	1. Time consuming for both student and instructor. 2. Often requires expensive equipment.	1. Useful for illustrating material and concepts introduced in other ways. 2. Provides practice. 3. The "hands-on" experience can be used to develop a more positive attitude toward the subject.
Independent Study Activities	1. Students assume responsibility for their own learning. 2. Promotes self reliance. 3. Students gain self-esteem and satisfaction.	1. Students must be highly motivated and well organized.	1. Increase problem solving skills. 2. Teach students to manage his own time. 3. Help students learn on their own.

EFFECTIVE USE OF MEDIA

Effective utilization is the most important aspect of an instructional media experience. Unfortunately, media and materials are used improperly more often than correctly. Think back on the many films you have had to sit through during your years as a student. How many times did the instructor really prepare for the presentation of a film? Did the teacher try to get you interested, tell you what to look for, or inform you of the purpose of viewing the film? How often was the film an integral part of the lesson plan? It would be difficult to venture a guess as to the percentage of times media are used improperly.

A basic utilization plan is presented here which, when applied, will enable students to receive maximum benefit from a media experience. This simple formula involves fives steps.

STEP 1 - PREPARE YOURSELF

A. Preview the media

B. Read available literature on the item (guides, pamphlets, etc.)

C. Take notes during the preview

D. Develop a "plan" to use the item
   1. how you will introduce it
   2. what you will do and ask your students to do during and after using it.
   3. how you will tie the activitiy to the flow of experiences and thus make it relevant and useful.

STEP 2 - PREPARE THE ENVIRONMENT

A. Arrange materials and equipment in a manner which will enable all students to see and hear well

B. Locate light switches, assure that drapes work, etc.

C. Reserve proper materials and equipment.

D. Be sure materials and equipment are set-up and ready to go when the time comes to use it.

STEP 3 - PREPARE THE CLASS

A. Introduce the item; make sure students understand why it is being presented at this particular time.

B. Briefly describe what it covers.

C. Stress what is important to be learned from it.

D. Tell the students what they will be expected to do after using the item.

1. should they expect a test?
2. be prepared to discuss its content or ideas.

STEP 4 - USE THE ITEM

A. Use the item properly

1. images in proper focus
2. projected image above the heads of viewers.
3. sound volume adjusted so all can hear well.

B. End the showing professionally by turning the equipment off as the final images fade.

STEP 5 - FOLLOW-UP

A. Invite and answer (or discuss) questions or opinions generated by the experience.

B. Review the experience - summarize the important information presented.

C. Devise follow-up activities which reinforce the information (demonstrations, lab experiments, debates, etc)

MODULE IV

SELF-ASSESSMENT

1. Define "learning activities".

2. If you were developing a module on farm animals, what three learning activities (listed in preferred order) would you prescribe for your students?

3. List the five steps in the basic media utilization plan explained in this packet and discuss at least two activities to be performed by the instructor in each step.

UNIT IV

SELF-ASSESSMENT ANSWERS

1. Learning activities are those experiences that have been designed to help (or enable) the student master the objectives for the module.

2. Choose learning activities that are as concrete as possible. For this particular instructional situation three activities might be:

   A. Take a field trip to a farm where students could see and touch the animals.
   B. Show a videotape or film of farm animals.
   C. Have students read about farm animals.

3. STEP 1 - PREPARE YOURSELF

   A. Preview the media.
   B. Read available literature on the item.
   C. Take notes during preview
   D. Develop a "plan" to use the item.

   STEP 2 - PREPARE THE ENVIRONMENT

   A. Arrange materials and equipment in a manner which enables all students to see and hear well.
   B. Locate light swithches, assure that drapes work, etc.
   C. Reserve proper materials and equipment.
   D. Be sure materials and equipment are set-up and ready to go when the time comes to use it.

STEP 3 - PREPARE THE CLASS

A. Introduce the item, make sure students understand why it is being presented at this particular time.

B. Briefly describe what it covers.

C. Stress what is important to be learned from it.

D. Tell students what they will be expected to do after using the item.

STEP 4 - USE THE ITEM

A. Use the item properly

B. End the showing professionally.

STEP 5 - FOLLOW-UP

A. Invite and answer (or discuss) questions or opinions generated by the experience.

B. Review the experience.

C. Devise follow-up activities.

UNIT V

ASSESSMENT

RATIONALE:

A test is a "dirty four-letter word" in the minds of most students. However, when properly prepared and utilized, they can be of benefit to students and instructors. The information in this module will assist you in preparing and using tests in a manner which will reap positive benefits for you and your students.

OBJECTIVES:

The learner will, on a written test:

1. Write a brief statement which describes, at least two, differences between norm-referenced and criterion-referenced assessment.
2. When given a test item/objective relationship, determine whether it has a proper correlation and in the case of an improper correlation, identify the faults of the relationship.
3. Describe two functions served by each of the following:
   A. Pre-assessment
   B. Self-assessment
   C. Post-assessment
4. When given sample test items, identify them as well-written or poorly-written, and explain why the poorly written items are such.

PRE-ASSESSMENT:

Take the pre-assessment test provided on pages 71 & 72.

LEARNING ACTIVITY:

1. Read "Constructing and Using Tests" on pages 74-82 of this packet.

SELF-ASSESSMENT:

Take the self-assessment provided on pages 83 & 84.

REMEDIATION:

Perform the learning activities again or consult with the school's instructional designer. After completing one of these activities, take the self-assessment again.

ENRICHMENT ACTIVITY:

Select an instructional unit (module) from one of your courses and pre, self, and post-assessments which are properly constructed and correlated with the objectives for the module.

UNIT V

PRE-ASSESSMENT:

1. Briefly describe the difference between norm-referenced and criterion-referenced assessment. (Cite at least two differences).

2. Determine if the test item/objective relationships given below has an acceptable correlation. If it is not acceptable, explain why.

OBJECTIVES:

On a written test, the student will:

A. Describe three methods by which state constitutions are amended.

B. List the three major types of municipal governments.

C. List the six major sources of revenue for cities.

D. Define "home rule".

TEST:

A. Define "home rule"

B. Define "federalism"

C. Describe three ways in which state constitutions can be amended.

D. List the three major types of municipal governments.

3. Explain two purposes served by a Pre-assessment
4. Explain two purposes served by Self-assessment
5. Explain two purposes served by Post-assessment
6. State whether each of the following items are well or poorly written. Explain the fault(s) of those identified, by you, as poorly written items.

   A. The man who invented the cotton gin was named _____.

   B. Chlorine is a _____.

   C. The President of the United States is elected to that office. (T/F)

   D. On the line to the left of each historical event in Colume A write the letter from Column B which identifies the time period during which the event occurred. Each date in Column B may be used only once.

COLUMN A	COLUMN B
___1. Boston Tea Party	A. 1765-1769
___2. Repeal of the Stamp Act	B. 1770-1774
___3. Battle of Lexington	C. 1775-1779
___4. Enactment of the Northwest Ordinance	D. 1780-17-84
	E. 1785-1789

Correct answers are on the following page.

PRE-ASSESSMENT ANSWERS

1. The differences described could touch upon:

   A. Comparison of student grades vs not comparing scores to determine grades.

   B. One has pre-determined standards - the other does not.

   C. Assumption of grade distribution in one - not in the other.

2. There is an improper correlation.

   - defining "federalism" is not one of the objectives.

   - there is no test item which correlates with Objective C.

3. Answer found on page 77.

4. Answer found on page 78.

5. Answer found on page 78.

6. A. Well-written, see page 80 & 81.

   B. Poorly-written, see page 80 , (completion (1).

   C. Poorly-written, see page 79 , (True/false) (1).

      1. President not always elected i.e. President Ford.

   D. Well-written, see page 80.

CONSTRUCTING AND USING TESTS

Evaluation must be an integral component of any formalized instructional process. When properly prepared and utilized, tests can assist student learning, determine student achievement, and improve instruction. If used wisely, they reduce frustration, prevent both major and minor failure, and improve the efficiency of instruction. Before delving further into the preparation and use of tests, we should first distinguish between norm-referenced assessment(commonly associated with A,B,C, grading systems) and the criterion-referenced method of assessment used at South Oklahoma City Junior College.

NORM-REFERENCED ASSESSMENT

This approach to assessment assumes that there must (or will be a distribution of grades. For example, there will be a certain number of "A's", a certain number of "B's", and so on. With this system there will always be a distribution of grades, no matter how good the instruction or how well the students, as a group, learn the material. This distribution will occur because the scores achieved by various students are divided into groups and a letter grade is assigned to each group. Essentially, a student's score is compared to the scores of the other students, rather than against a pre-determined (or pre-set) standard. Therefore, the scores achieved by other students have a direct influence on the grade received by each individual student. Let us take the example of a student who received a grade of 85 on a test. With the norm-referenced approach,

this particular student would receive a grade of "B" if many students scored in the 90's. If, on the other hand, most students scored in the 70's, this particular student would receive a grade of "A". As you can see, whether the student satisfactorally learned the material is not considered - only how his score compared to the scores of other students. Important things to remember about norm-referenced assessment are that there is no pre-determined criteria (or standards) by which students are judged and that there is the assumption that there will be a distribution of grades. That is, so many "A's", so many "B's", so many "C's", and so on.

CRITERION-REFERENCED ASSESSMENT

The criterion-referenced assessment simply means that there is a predetermined standard (criterion) by which the student is judged. In our system at SOCJC, the objectives stated in each module serve as the criterion (standards) w ich students must achieve. For example, if an individual successfully achieves the "MH" objectives, then he will receive an "MH" grade. The scores of other students are never considered in determining each student's grade. Therefore, the scores of other students have no influence on each individual student's grade.

TEST ITEM/OBJECTIVE RELATIONSHIP

With the criterion-referenced assessment system, it is extremely important that test items and objectives be directly related. In other words, test items should ask students to demonstrate the knowledge and/or skills specified in each objective. Items should also require students to demonstrate the skills and/or knowledge to the degree and under the conditions stated in each objective. To ask

a student to do something not specified in the objectives is not acceptable. Tests should also determine whether every objective has been achieved by students. In other words, for every objective there should be a corresponding test question. The best way to check this is to read the first objective and determine if there is a question on the pre, self, and post-assessments which requires students to do exactly what was stated in the objective. Proceed on through all the objectives in this manner. Next, reverse the procedure and read the first test question to determine if you have asked students to do something not listed in the objectives. Proceed on through each question in this manner. If, indeed, you have asked students to do something not listed in the objectives, then you must make a decision. You must either eliminate the question or add an objective.

A common error which must be guarded against is the tendency to tell students they will have to do something in a specific manner in an objective, then ask them to do it in a different manner on a test. For example, it is common for students to be told, through objectives, that they will be required to "list" something, only to find that the related test question asks them to "discuss" the topic. It is one thing to be prepared, for example, to "list" the major organs of the human body; it is obviously something else to "discuss" the major organs. The importance of precisely correlating test questions with objectives cannot be overemphasized.

ASSESSMENTS USED IN SYSTEMIZED INSTRUCTION

Three forms of assessments are used in the systemized approach to instruction employed at SOCJC. They are pre-assessment, self-assessment, and post-assessment. Each plays a different role in the process and performs a variety of functions.

PRE-ASSESSMENT - is typically used to determine if the student already possesses the skills and/or knowledge taught in the module. If mastery is demonstrated on the pre-assessment, the student need not perform the learning activities. He may proceed to the post-assessment or otherwise arrange to demonstrate his knowledge to the instructor. If mastery is not shown, the pre-assessment indicates those parts of the module where more study is needed.

Rather than include pre-assessment tests in the learning packet, many instructors choose to make these tests available only through a testing center. In these cases, the successful completion of the pre-assessment test is all that is needed for the student to receive credit for the module.

In some modules it may be desirable to have a pre-assessment that measures whether the student has the needed background information. A module on constructing a weather map, for example, might include a pre-assessment over the symbols and markings that are used on weather maps. A low score on this type of pre-assessment would indicate the need for review before proceeding with the module.

SELF-ASSESSMENT - is an integral part of the learning program for each student. It may consist of a series of test exercises following each learning activity or a set of questions to be completed at the end of the unit (module) of instruction. It is intended to help the student master the learning material in the module and to assist him in determining when he is ready to take the post-assessment.

POST-ASSESSMENT - is used to determine whether or not the student can demonstrate the desired learning outcomes. This assessement must test knowledge and/or skills that are directly related to the stated objectives of the module. As previously stated in this packet, there should be a correlation between the assessment questions in the post-assessment and module objectives. Post-assessment may also be used by the instructor to evaluate instruction. The use of post-assessment to evaluate instruction will be discussed in Module VII of this packet which is entitled "Evaluation and Revision".

Post-assessments are not included in the learning packet. The student is simply told where to obtain it after he has finished the assignments in the module.

Again, make note of the fact that all assessments used in or with the learning packet are criterion-referenced. That is, they are designed to determine how well the student can perform the specific learning tasks defined by the objectives of the module.

CONSTRUCTING ASSESSMENT ITEMS

If an instructor is to accurately evaluate the quality of instruction and student achievement, he must be able to construct good test items. The following principles and suggestions are suggested by James D. Russell in Modular Instruction and should be considered when preparing tests.

TRUE/FALSE

1. Avoid broad general statements. They tend to confuse the student who actually could answer the question but is distracted by the complexity of the sentence.
2. If the statement is false, it should be incorrect because the major part of the sentence is incorrect; not because a small detail slipped into the sentence makes it incorrect.
3. It is best to make statements positive.
4. Restrict each statement to a single idea or principle. Items with several parts are often confusing.
5. Base items on key ideas and avoid the use of statements taken directly from the module or textbook.

MULTIPLE-CHOICE

1. The stem of the item should be clear and should present a single idea to be completed.
2. Each of the possible answers should provide a logical completion of the stem.
3. Avoid clues such as:
   A. Always making the correct answer the longest or most detailed.
   B. Having a plural verb in the stem and only one plural form among the possible answers.

4. There should be only one correct answer.

5. All choices should be grammatically correct.

MATCHING

1. The instructions should:

   A. Indicate the basis for matching.

   B. State whether an answer may be used more than once.

   C. State whether more than one answer is to be given for any of the questions.

2. Every choice in the second column should be a possible match for the first column.

3. There should be extra choices in the answer column to avoid selection by the process of elimination.

4. All items in each column should be of the same type. That is, names, dates, elements, etc.

5. There should be from eight to twelve items in each column.

6. Arrange the list of responses in logical order.

COMPLETION

1. Avoid taking statements directly from the textbook or module.

2. The blank(s) should be placed as close to the end of the statement as possible.

3. The length of the blanks should be the same to avoid giving

clues to the length of the correct answer.

4. Avoid items with so many blanks that the intent of the statement is unclear.

5. Word the statement so that only key words are omitted.

6. Do not give the answer away with grammatical clues.

SHORT-ANSWER

1. The question should be as specific as possible.

2. Avoid emphasis on specific facts and processes.

3. Encourage thinking and problem solving activities.

ACTUAL PERFORMANCE

1. Specify exactly what the student is to do, which equipment and materials he will be allowed to use, and tell him how his performance is going to be evaluated.

2. Use a checklist to evaluate a performance.

3. The student's performance may be evaluated by examining the product of the performance, i.e. in art, metalwork, etc.

4. Provide the student with immediate evaluation of the performance.

ESSAY

1. Use several fairly specific and brief questions rather than a few lengthy, more general ones.

2. Limit each item to one idea or area of knowledge.

3. Let the student know exactly what is expected in his answer.

4. Focus on analysis, synthesis, and evaluation.

5. Keep the grading of essay tests objective:

   A. Keep names anonymous until the test has been graded.

   B. Grade one question on all papers before going on to the next question.

   C. Use a scoring key with model answers and a point system.

UNIT V

SELF-ASSESSMENT

1. Briefly describe at least two differences between norm-referenced and criterion-referenced assessment.

2. State whether the test item/objectives relationship given below has a proper correlation. If there are faults in the relationship, identify them.

OBJECTIVES: On a written test, the student will:

A. List the six major points in the Declaration of Independence.

B. Describe the structure of the federal judicial system.

C. State the number of members in the House of Representatives.

D. Define "Lobbyist".

E. Name the three branches of the Federal government.

TEST:

A. Name the three branches of the Federal government.

B. Describe the powers of the President.

C. Define "Lobbyist".

D. How many Representatives are in the House of Representatives?

E. Describe the six major points in the Declaration of Independence.

3. Describe two functions served by each of the following:
   A. Pre-Assessment

   B. Self-Assessment

   C. Post-Assessment

4. Read each of the following sample test items and state whether each is well written or poorly written. When a poorly written item is identified, explain the flaw(s) in the item.

   A. On the line to the left of each United States space event in Column A, write the letter of the astronaunt in Column B who achieved that honor.

COLUMN A	COLUMN B
_____1. First U.S. Astronaut to ride in a space capsule.	A. Edwin Aldrin
_____2. First U.S. astronaut to orbit the earth.	B. Neil Armstrong
_____3. First U.S. astronaut to walk in space.	C. Scott Carpenter
_____4. First U.S. astronaut to step on the moon.	D. John Glenn
	E. Wally Schirra
	F. Alan Shepard
	G. Edward White

B. Despite the theoretical and experimental difficulties of determining the exact ph value of a solution, it is possible to determine if a solution is acid by the red color formed on litmus paper when it is inserted into the solution. (T/F)

C. _____ animals that are born _____and their young are called _____.

D. Which one of the following factors contributed most to the selection of Sacramento as the capital of California?

A. Central location

B. Good climate

C. Good highways

D. Large population

Correct answers on the following page. 83

UNIT V

SELF-ASSESSMENT ANSWERS:

1. Should elaborate on:
   A. Students competing for grades
   B. Pre-determined grades
   C. Grade distribution

2. Objectives and test items are not correlated properly:
   - Objective A tells students to "list" while corresponding question E asks them to "describe".
   - There is no corresponding question for objective B.
   - Objective C and question D are well correlated.
   - Objective D and question C are well correlated.
   - Objective E and question A are well correlated.
   - There is no objective for question B.

3. Pre-Assessment:
   A. Determine whether a specific student already knows the information in the module.
   B. Indicates those parts of a module where more study is needed.
   C. Determines whether student(s) have the necessary background knowledge.
   D. Assists instructor to determine at what level to start the course i.e. at a more elementary or advanced level than originally planned.

SELF-ASSESSMENT:

A. Assists students in learning the material.

B. Assists student to determine when he is ready for the post-assessment.

POST-ASSESSMENT:

A. Used to determine whether or not a student has mastered the objectives.

B. Can be used to evaluate and improve instruction.

4. A. - poorly written - instructions do not state whether an answer may be used more than once and whether more than one answer is to be given for any of the questions.

B. - poorly written - avoid long, broad general statements.

C. - poorly written - so many blanks that the intent of the statement is unclear.

D. - well written

MODULE VI

RFMEDIATION AND ENRICHMENT ACTIVTIES

RATIONALE:

Both remedial and enrichment activities help students gain a better understanding of the course material. The information presented in this module will help in the preparation of these activities. Thereby, enhancing student learning and understanding of course subject matter.

OBJECTIVES

On a written exam, the learner will:

1. Explain the purpose of remedial activities.
2. Explain, at least, two of the types of remedial activities presented in "Descriptions and Purposes of Remedial and Enrichment Activities".
3. Explain two reasons for using enrichment activities.
4. List three traits of enrichment activities.

PRE-ASSESSMENT

Take the pre-assessment test provided on page 90.

LEARNING ACTIVITY

1. Read "Descriptions and Purposes of Remedial and Enrichment Activities".

SELF-ASSESSMENT

Take the self-assessment test provided on page 94.

REMEDIATION

Perform the learning activity again or consult with the school's instructional designer. After completing one of these activities, take the self-assessment test again.

ENRICHMENT ACTIVITIES

Select an instructional unit (module) from one of your courses and prepare appropriate remedial and enrichment activities for that unit.

MODULE VI

PRE-ASSESSMENT

1. What is the purpose of remedial activities?

2. Explain, at least, two types of remedial activities.

3. Enrichmert activities are used for two reasons. Explain the two reasons.

4. What are the three traits of enrichment activities.

Correct answers are provided on the following page.

MODULE VI

PRE-ASSESSMENT ANSWERS

1. Assist the student who has not achieved mastery of the module objective(s).

2. Should have discussed:
   A. Repeating of learning activities
   B. New and different learning activities
   C. One-to-one counseling

3. A. Give students the opportunity to apply new knowledge.

   B. Increase the likelihood that the student will remember the newly gained knowledge.

4. A. Not busy work
   B. Always optional
   C. Challenging in nature

DESCRIPTIONS AND PURPOSES OF REMEDIAL AND ENRICHMENT ACTIVITIES

WHAT IS REMEDIATION?

Remediation is made up of learning activities which are intended to assist the student who has not demonstrated mastery of the module objective(s). This evidence should be indicated in the post-assessment.

Remediation means recycling. Recycling may mean reworking through the learning activities (frequently, simply repeating the activities is all the student needs to master the subject matter). Or, it may mean new and different learning activities (especially if no alternatives were offered within the original learning activities). See Module IV, pages 51-52. In all cases, it is the intent of remediation to be helpful and provide every opportunity for the student to be successful. Under no circumstances should remedial activities be viewed as "punishment". They are merely additional activities designed to further help the student master the module.

The best and usually most successful remedial activity is a situation in which an instructor counsels the student on a one-to-one basis. This method enables the instructor to determine, through test results and discussions with the student, specific areas in which the student is having difficulty. Based upon this information the instructor can prescribe activities which will meet the individual student's needs. In many instances, the instructor can quickly clarify subject matter which the student has found to be difficult. At other times, activities will be assigned which relate specifically to problem areas.

Many instructors, however, prefer to use this method only after all other activities have proven unsuccessful. Primary reasons for this preference are:

A. Many prefer to give students every opportunity to learn the material on their own.

B. The demands on the instructor's time are tremendous if many students have problems. (This is not a problem in courses which are self-paced and self-instructional).

WHY HAVE ENRICHMENT ACTIVITIES?

An enrichment activity provides an opportunity for the student to apply knowledge while it is still fresh in his memory. Thereby, greatly increasing the probability that the newly gained knowledge will be remembered. (Research studies repeatedly show that when a student applies or uses new knowledge, the likelihood that he will remember it is greatly increased).

Enrichment activities can obviously be beneficial to students. They are however:

1. Not busy work
2. Always optional
3. Challenging in nature

MODULE VI

SELF-ASSESSMENT

1. Explain the purpose of remedial activities.

2. Explain, at least, two of the types of remedial activities presented in "Descriptions and Purposes of Remedial and Enrichment Activities".

3. Explain two reasons for including enrichment activities in modules.

4. List three traits of enrichment activities.

Correct answers are provided on the following page.

MODULE VI

SELF-ASSESSMENT ANSWERS

1. Assist the student who has not achieved mastery of the module objective(s).

2. Should have discussed:
   A. Repeating of learning activities
   B. New and different learning activities
   C. One-to-one counseling

3. A. Give students the opportunity to apply new knowledge.

   B. Increase the likelihood that the student will remember the newly gained knowledge.

4. A. Not busy work
   B. Always optional
   C. Challenging in nature

MODULE VII

EVALUATION AND REVISION

RATIONALE:

Regardless of the time and effor put into the development of a learning packet, it is likely that some revisions will be necessary to achieve maximum student learning. Such revision should not be based on a "feeling" perceived by the instructor. Rather they should be based on a formal evaluation of the packet and its results. As instructors concerned with promoting maximum learning, we are interested in developing the most effective packet possible. This is achieved, not through a one time writing and application of a learning packet but rather by the continued evaluation and revision of the packet. This module will aid you in this process.

OBJECTIVES:

On a written test, the learner will:

1. When given a chart of "Student Performance of the Post-test" identify specific objectives on which students appear to perform poorly.
2. Describe the two steps to be taken once you have identified objectives on which students perform poorly.
3. State the primary purpose of the student questionnaire method of assessing instructional effectiveness.
4. State the benefit of using questions, on the student questionnaire, which directly relate to actual parts of the learning packet.

PRE-ASSESSMENT:

Take the pre-assessment test on page 98.

LEARNING ACTIVITY:

Read "Assessing Instructional Effectiveness" on page 100 of this packet.

SELF-ASSESSMENT:

Take the self-assessment test provided on page 105.

REMEDIATION:

Perform the learning activity again or consult with the school's instructional designer. After completing one or both of these activities take the self-assessment again.

ENRICHMENT ACTIVITIES:

1. Select an instructional unit (module) from one of your courses and with the use of data from previous tests, identify those objectives on which students performed poorly.
2. Develop a "Student Questionnaire" for use in one of your courses.

MODULE VII

PRE-ASSESSMENT:

1. Based on the data depicted on the following chart, identify specific objectives on which students appear to perform poorly.

OBJECTIVES

STUDENTS	1	2	3	4	5	6	7
1	X	X	X	X		X	X
2		X	X	X	X	X	X
3		X	X				
4	X	X	X	X		X	X
5		X	X	X	X	X	X
6		X	X	X	X	X	X
7		X		X	X	X	X
8			X				
9	X	X	X	X		X	X
10			X	X	X	X	X
	30	80	90	80	50	80	100

2. Two steps are to be taken once you have identified objectives on which students perform poorly- describe these steps.

3. What is the primary purpose of the "Student Questionnaire" method of assessing instructional effectiveness?

4. What is the benefit of using questions on the student questionnaire which directly relate to actual parts of the learning packets?

MODULE VII

PRE-ASSESSMENT ANSWERS:

1. Objectives one and five.

2. (a) Examine the exact wording of the objective and the related test items.

   (b) Re-examine the learning activities associated with the various objectives with which students had difficulty.

3. To identify, from the students' perceptions, the weakness and strengths of the materials and methods used in the course.

4. This makes it possible to related the students' responses directly to particular components of the packet.

ASSESSING INSTRUCTIONAL EFFECTIVENESS

Many instructors think of evaluation merely as the testing and assigning of grades to students. While this is certainly important, it is only one aspect of evaluating instruction. An equally important purpose of evaluation is an assessment of the instruction itself. In other words, evaluation should seek to answer two questions, "How well did the student do?" and "How well were the learning packet and instruction designed?" Since the evaluation of student performance for grading purposes was discussed in Module V, we will only concern ourselves with the evaluation and revision of learning packets in this module.

Two useful ways of assessing instructional effectiveness are (1) the careful analysis of student performance and (2) student questionnaires. Once having collected information about student performance and opinion, it becomes necessary to interpret that information and decide what steps should be taken to improve the effectiveness of the learning packet and instructional procedures.

ANALYSIS OF STUDENT PERFORMANCE

The best measure of instructional effectiveness lies in a careful analysis of student success in achieving each objective. The development of a chart, such as Table 1, is very useful in displaying the success of each student on each objective. As you can see, the chart depicts the percentage of students achieving each objective and indicates the objectives achieved by each student.

TABLE 1

STUDENT PERFORMANCE ON THE POST-TEST
(X indicates objective was achieved)

	OBJECTIVES				
STUDENTS	1	2	3	4	5
1	X	X	X	X	
2	X		X	X	X
3	X	X	X	X	X
4	X	X	X	X	
5	X		X	X	X
6	X	X		X	X
7	X	X			
8	X	X	X		
	100	75	75	75	50

Percent of Students Achieving Each Objective

Once a chart has been developed, you can assess students' performance on each objective and begin to focus on specific objectives which appear to need revision. In our example, for instance, the average success rate for the objectives was 75%. However, the rate of success for objective number 5 was only 50%. This, of course, indicates that students are having trouble achieving objective number 5.

As you identify objectives on which the students perform poorly, examine the exact wording of the objective and the related test items. Prior to making major revisions in the learning activities, look to see if it was poor test items, rather than the activities, which resulted in poor student performance. All that may be needed is revised test items to bring them in line with the stated objectives.

The next step is to reexamine the learning activities associated with various objectives with which students had difficulty. Some questions which should be asked are:

1. Were the reading and audio visual materials made available to students?
2. Were students provided with more than one activity which would enable them to achieve each objective i.e. reading, viewing media, attending a lecture, etc.?
3. Can a more direct experience be provided in the activities?
4. Should more practice or lab time be provided?

STUDENT QUESTIONNAIRES

An additional method of assessing instructional effectiveness is the use of student questionnaires. The primary purpose for obtaining student reactions to the instruction is to identify, from their perceptions, weaknesses and strengths of materials and methods used in the course. The following questions would usually be appropriate:

1. Was the instruction interesting?
2. Did you understand what you were supposed to learn?
3. Were the learning activities directly related to the stated objectives?
4. Were sufficient practice exercises included?
5. Were practice exercises appropriate?
6. Did you receive sufficient feedback on your practice exercises?
7. Did the tests really measure your knowledge on the stated objectives?
8. Were there long delays in getting test scores?
9. Were enrichment or remedial activities satisfactory?
10. Were there questions about how to proceed from one step to the next?
11. Were you hindered by the logistics required to use materials i.e. access to labs, a-v equipment, etc?

These are a few of the questions which might be included on a student questionnaire and then pursued at some depth in a discussion with students. By using questions directly related at actual parts of the learning packet, such as those described above, it is possible to relate the students' responses directly to particular

components of the packet. For example, question number 2, relates to the objectives. Were they well written and understandable to the student? Question number 10 relates to directions on how to use the packet. Question number 4 relates to the learning activities.

MODULE VII

SELF-ASSESSMENT:

1. Based on the data depicted in the chart below, identify specific objectives on which student appear to perform poorly.

OBJECTIVES

STUDENTS	1	2	3	4	5	6	7	8
1	X	X		X	X	X		X
2	X	X	X	X	X		X	X
3		X		X	X	X	X	X
4		X	X	X	X	X	X	X
5	X	X		X		X		X
6		X	X	X	X	X		X
7	X	X		X	X	X		X
8	X	X	X	X	X	X		X
9	X	X		X		X	X	X
10		X	X	X	X	X		X
	60	100	50	100	80	90	40	100

2. Describe the two steps to be taken once you have identified objectives on which students perform poorly.
3. State the primary purpose of the Student Questionnaire method

of assessing instructional effectiveness.

4. State the benefit of using questions, on the student questionnaire, which directly relate to actual parts of the learning packet.

MODULE VII

SELF-ASSESSMENT ANSWERS:

1. Students are performing poorly on objectives 1,3, & 7. While there are no set criteria for student performance and revision, it would seem logical that revisions are in order when less than 70% of the students are able to achieve an objective.

2. (a) Examine the exact wording of the objectives and the related test items. Are the students being tested for the information they are told to know in the objectives? Or, are they being told that they will need to know certain things in the objectives and then tested on something else?

   (b) Examine the learning activities associated with various objectives with which students had difficulty. Adjustments in the learning activities may be needed.

3. To identify, from the students' view, weaknesses and strengths of materials and methods used in the course.

4. This makes it possible to relate the students' responses directly to a particular components of the packet.

LEARNING PACKET EVALUATION FORM

Rarely, if ever, is a learning packet written which cannot be improved upon through comments and suggestions from the user. Toward this end, please make any comments which you feel will help in the evaluation and improvement of this learning packet.

1. Were the objectives written in a manner which enabled you to understand what you were supposed to learn?

2. Were the learning activities directly related to the stated objectives?

3. Did the tests really measure your knowledge of the stated objectives?

4. Were remedial and enrichment activities useful (if you used them)?

5. Were there questions about how to proceed from one step to the next?

6. What did you <u>like</u> about this learning packet?

7. What did you <u>dislike</u> about this learning packet?

8. Please write any suggestions or changes which you believe will improve this learning packet.

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